A SYNOPSIS ON THE TOPIC

IMPACT OF COVID 19 ON TYPE 2 DIABETES PATIENTS WITH LIPIDS AND TSH LEVELS IN RURAL AND URBAN POPULATION OF PATHANKOT, PUNJAB

FOR REGISTRATION AS A RESEARCH SCHOLAR

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IN

BIOCHEMISTRY

SUBMITTED BY

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CANDIDATE'S DECLARATION

I hereby certify that the work which is being presented in the thesis entitled, **"IMPACT OF COVID 19 ON TYPE 2 DIABETES PATIENTS WITH LIPIDS AND TSH LEVELS IN RURAL AND URBAN POPULATION OF PATHANKOT, PUNJAB"** in partial fulfilment of the requirements for the award of the Degree of Doctorate of Philosophy and submitted in the Department of the biochemistry of the Desh Bhagat University, Mandi Gobindgarh, Punjab is an authentic record of my work carried under the supervision of Dr Savneet Kaur, Assistant Professor, Desh Bhagat University, Mandi, Gobindgarh, Punjab. The matter introduced in this thesis has not been submitted by me for the honor of some other level of this or some other university. This is to confirm that the above assertion made by the applicant is right apparently.

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INTRODUCTION- Type 2 diabetes is a hindrance in the manner the body manages and utilizes sugar (glucose) as a fuel. This long-haul (ongoing) condition results in an excess of sugar coursing in the circulatory system. In the long run, high glucose levels can prompt issues in the circulatory, apprehensive and safe frameworks.

In type 2 diabetes, there are chiefly two interrelated issues at work. Your pancreas doesn't make adequate insulin — a substance that controls the advancement of sugar into your cells — and cells respond ineffectually to insulin and take in less sugar.

Type 2 diabetes known as adult diabetes, both type 1 and type II diabetes can begin during pre-adulthood and on maturity. Type 2 is more ordinary in more prepared adults, yet the augmentation in the number of children with weight has provoked more examples of type 2 diabetes in more young people.

There's no solution for type 2 diabetes, however getting in shape, eating great and practicing can assist you with dealing with the infection. Assuming eating routine and exercise aren't to the point of dealing with your glucose, you may likewise require diabetes meds or insulin treatment.

Indications

Signs and indications of type 2 diabetes frequently grow gradually. Indeed, you can be living with type 2 diabetes for a long time and not know it.

Signs might include:

- Expanded thirst
- Continuous pee

- Expanded craving
- Accidental weight reduction
- Exhaustion
- Obscured vision
- Slow-recuperating wounds
- Continuous contaminations
- Deadness or shivering in the hands or feet
- Areas of obscured skin, as a rule in the armpits and neck

TSH (Thyroid-stimulating hormone) Test

A TSH is a hormonal blood test that involves thyroid metabolism. The thyroid is a little butterfly-shaped organ near the neck. It additionally takes a huge part in administering your mass, and deepest warmness level, and deals with the utilization of energy. Thyroid hormones deals with muscle strength, and temper.

Need for Tsh Test

A test involves hypothyroidism and hyperthyroidism and for confirmation, we need tsh test for the same.

Signs of hypothyroidism :

- mass gain
- Hair dryness
- Dormancy
- Bald or hair loss
- Low size to bear cold temperatures

Test Preparation :

We don’t need any kind of special preparation for the test but we should consider avoiding some hard drinks and high protein diets that interfere with the results.

Results mean :

An undeniable degree of TSH can mean your thyroid isn't making adequate thyroid chemicals, a condition called hypothyroidism. A TSH test doesn't work on why TSH levels are very high or incredibly low. Assuming that exploratory results are not satisfactory, the clinical service provider will probably add additional tests to choose the explanation or to analyze your thyroid issue. These tests may include:

- T4
- T3

•toexamine Hashimoto's thyroiditis, insusceptible framework contamination that causes hypothyroidism

Dyslipidemia

Dyslipidemia is characterized as having blood lipid levels that are excessively high or low. Blood lipids are greasy substances, like fatty oils and cholesterol.

Dyslipidemia happens when somebody has unusual degrees of lipids in their blood. While the term portrays a wide scope of conditions, the most well-known types of dyslipidemia include:

•significant degrees of low-thickness lipoproteins (LDL), or terrible cholesterol

• low degrees of high-thickness lipoproteins (HDL), or great cholesterol

•elevated cholesterol, which alludes to high LDL and fatty oil levels

Lipids, or fats, build life squares and give energy to cells. Lipids include:

•LDL cholesterol is viewed as awful because it can make plaque structures in the veins.

•HDL cholesterol is viewed as great since it can assist with eliminating LDL from the blood.

Fatty oils foster when calories are not consumed immediately and are put awayinfatcells. Solid blood lipid levels normally differ from one individual to another. Nonetheless, individuals with significant degrees of LDL and fatty oils or extremely low HDL levels will generally have a higher danger of creating atherosclerosis. Atherosclerosis creates when hard, greasy stores called plaques aggregate in veins, making it hard for blood to stream. Over the long haul, these plaques can develop and cause significant dissemination issues, for example, coronary episodes and strokes. Manifestations except if it is serious, a great many people with dyslipidemia are ignorant that they have it. A specialist will ordinarily analyze dyslipidemia during a normal blood test or a test for another condition. Serious or untreated dyslipidemia can prompt different conditions,

including coronary supply route sickness (CAD) and fringe conduit illness (PAD). Both CAD and PAD can cause genuine unexpected issues, including respiratory failures and strokes. Normal side effects of these conditions include:

- leg torment, particularly when strolling or standing
- chest torment
- snugness or tension in the chest and windedness
- agony, snugness, and strain in the neck, jaw, bears, and back
- acid reflux and indigestion
- rest issues and daytime weariness
- discombobulation
- heart palpitations
- cold sweats
- heaving and sickness
- expanding in the legs, lower legs, feet, stomach, and veins of theneck
- blacking out

These indications might deteriorate with movement or stretch and improve when an individual rests.

Covid 19

This is the class of RNA infection And in a few cases, it is challenging to find out Coronavirus or cold like infection that causes fever .

Side effects

Runny nose , muscle torment , cold and hack , fever.

REVIEW OF LITERATURE

Thyroid and diabetes are related to each other, there are very few reviews that have plotted this relationship in type 2 diabetes mellitus. One of the studies has observed that most patients with COVID-19 present with euthyroidism. We observed mild reductions in TSH and FT4 in keeping with a nonthyroidal illness syndrome (Khoo B, 2021). Another study was held in Saudi Arabia in which the author observed that DM

is high among hospitalized Covid-19 patients in Riyadh, Saudi Arabia. While DM patients have a higher mortality rate than non-DM patients, other factors such as old age, congestive heart failure, smoking, β-blocker use, the presence of bilateral lung infiltrates, elevated creatinine, and severe vitamin D deficiency, appear to be more significant predictors of mortality. Covid-19 patients with either elevated RBG or other acute metabolic impairments (neutrophilia, acute renal and liver dysfunctions) on admission are more likely to receive intensive care (Alguwaihes, 2020). This current audit is to concentrate on the connection between blood lipids and thyroid in type 2 diabetes. Dyslipidemia plays an important role in thyroid chapter and subclinical and diabetes mellitus with development in low-density lipoprotein. Glucose and lipid assimilation are associated in various ways. The super clinical indication of this affiliation is diabetic dyslipidemia, depicted by raised greasy substances, low high thickness lipoprotein cholesterol (HDL-C), and force of minimal thick LDL particles. Regardless, to some degree as of late we have found that the affiliation is fundamentally more amazing. Hypertriglyceridemia and low HDL-C can't be the result yet notwithstanding the justification behind upset glucose absorption. Moreover, it is as of now grounded that statins are connected with a little anyway basic development in the peril for fresh start diabetes.

GAPS IN STUDY AS PER LITERATURE REVIEW

Different specialists have concentrated on the job of tracking down connections between diabetes, lipids, TSH level, and covid 19. One of the studies was held in the UK in 2021 which was an observational study in which the author proposed most patients with COVID-19 present with euthyroidism (Khoo B, 2021). So in this review, we will perform different blood tests among individuals of Pathankot, to track down the co connection among them and to investigate the situation with the conditions in Pathankot.

AIMS AND OBJECTIVES

This review will be led on individuals previously experiencing type 2 diabetes mellitus so the scientist can find and investigate the situation with Tsh and lipids among them.

To check the above suppositions following focuses are the principle goals:

- The goal of the review is to analyse the lipids and TSH level in type 2 diabetes mellitus in Pathankot, Punjab
- To track down the co connection between dyslipidemia and type 2 diabetes mellitus
- To Find the relationship between thyroid dysfunction with diabetic complications.
- To find the impact of Covid 19 on pre-diabetics and post diabetics
- To concentrate on the co-connection between Coronavirus infection and tsh level in diabetics

Expected outcome: The goal of the current work is to concentrate on the current status of Patients experiencing Type 2 diabetes mellitus and have a history of covid 19 virus in the Pathankot region by investigating Tsh and lipid levels in diabetic, as well as inpatients, have a history of covid So it will be useful for us to examine such information and track down such relations between them.

CHAPTER PLAN

Chapter I: General introduction to Diabetes mellitus, thyroid hormone, and dyslipidemia and covid.

Chapter II: **Review of Literature**: In this section, the researcher will audit a few investigations in which the researcher could track down a connection between TSH, lipids, and type II diabetes mellitus and a portion of the review expressed the basic association among them.

Chapter III: **Materials and methods** - In the current review, a blood test will be gathered and led on recent clinical and research facility analyzed patients of Type 2 diabetes mellitus.

Sample size -

The analyst will gather information from different labs and hospitals according to the need. The researcher will gather information from different areas of Pathankot, Males and females both will be the piece of our exploration to summarize 200 Patients. The researcher will gather 200 patients information who is experiencing Type II diabetes mellitus and have patients who have a history of covid 19 to discover a suitable outcome. Patients will be one who was suffering from diabetes mellitus and who have a history of covid 19 Gathered information of t2dm came about by the strategy hexokinase. Thus, the specialist will concentrate on the TSH and lipids with the technique of photometry and Chemi Luminescent Immuno Assay.

Incorporation...

- Patients experiencing Type 2 diabetes mellitus and are taking drugs
- Patients who were recently diagnosed with diabetes
- Patients who are on general supplements with first stage medication metformin
- Patients have a history of covid 19 and were recovered.

Avoidance

- Patients who are seriously sick

Chapter IV: **Site of Research area:** The site of the examination region will be Pathankot and its close by areas.

Chapter V :

Results and Conclusions: In this part, the end will be made later by investigating the situation with Lipids and Tsh in Type II diabetes and in patients who have a history of covid 19 and the fitting connection between them.

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